The trade balance and fiscal policy in the OECD

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Abstract

We explore the short-run impact of movements in different components of fiscal policy on the trade balance, exports and imports for a panel of OECD countries over 1960–1995. We find that the composition of a shift in fiscal policy and the exchange rate regime matter for its transmission to the external account. The strongest result is that an expansion in wage government consumption causes a contraction in exports and a deterioration of the trade balance, especially under flexible exchange rates. We discuss the implications of our results for fiscal and current-account adjustment. © 1998 Elsevier Science B.V. All rights reserved.

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1. Introduction

The connection between fiscal policy and the trade balance has attracted much research attention in recent years. One strand in the literature has focused

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on the relationship between the fiscal deficit and the trade deficit in models in which Ricardian Equivalence breaks down (Frenkel and Razin, 1987). Other economists have studied external account adjustment to government consumption fluctuations in models in which output is exogenous and private consumption responses are optimally determined (Sachs, 1982). In this paper, rather, we emphasize the impact of fiscal policy on the level of production of traded goods as a mechanism by which government spending and taxation influence the behavior of the trade balance. Models with endogenous output include both theories of demand-determined output and of adjustment in the optimal supply of traded goods (Mundell, 1963; Baxter, 1995; Obstfeld and Rogoff, 1995).

As discussed in Section 2, we argue that increases in government wage consumption drives up economy-wide wages and crowds out the production of traded goods (see also Helpman, 1976). Similarly, an increase in labor taxes drives up the pre-tax wage and depresses output in the traded sector, unless labor taxes are completely absorbed by workers. Moreover, in the presence of sticky prices, the movements in the nominal exchange rate that are induced by shifts in fiscal policy alter the level of foreign demand for, and hence the production of, domestic traded goods.

A decline in the level of output in the traded sector likely translates into a deterioration of the trade balance, especially if there exist adjustment costs that prevent consumption and investment of traded goods from falling too rapidly. As such, this paper continues a recent literature that emphasizes that an important transmission mechanism for fiscal policy in an open economy is via the international competitiveness of domestic producers of traded goods (Alesina and Perotti, 1995a, 1997a; Lane and Perotti, 1996, 1997).

Empirically, in Section 3, we show that there is substantial evidence in a panel of OECD countries over 1960–1995 that expansions in wage government consumption are associated with a contraction in exports and a deterioration of the trade balance. Moreover, these negative effects are more severe in flexible exchange rate regimes, which is consistent with the operation of an exchange rate channel in the presence of nominal rigidities. In Section 4, we interpret these results in the context of recent fiscal adjustments and with respect to the design of balance of payments adjustment programs. Section 5 concludes.

2. Theory

As a framework, think of a two-sector small open economy, producing nontraded and traded goods. (The nontraded sector includes government production.) Fiscal shocks are transmitted to the traded sector – which is not dependent on the domestic economy as a source of final demand – via the labor market. For instance, an expansion in government hiring or the level of government wages crowds out traded sector labor demand and places upward pressure

on economy-wide wages (see Helpman, 1976).[1] Similarly, an increase in labor taxation raises the pre-tax wage, unless labor taxes are completely absorbed by workers. In turn, the increase in wage costs depresses the level of traded sector output.

In response to a fall in traded sector output, the likely impact effect on the trade balance is negative. Of course, this is not a fully general statement as strictly speaking it will depend on the nature of any nonseparabilities between consumption of traded, nontraded and government goods and the duration of the shock. A negative response is most plausible if the shock is transient but is also probable for permanent shocks if there are adjustment costs, such as habit persistence in consumption and convex installation costs in investment, that prevent tradables consumption and investment from contracting at the same rate as output.

Moreover, the short-run increase in GDP that is generated by an expansion in wage government consumption – provided the expansion in the nontraded sector dominates the contraction in the traded sector – will cause the nominal exchange rate to appreciate. In response to an increase in labor taxation, in contrast, the nominal exchange rate will depreciate as there is no positive effect to offset the output decline in the traded sector. This implies that, if there exist some nominal rigidities in the economy, responses to fiscal policy will differ under flexible versus fixed exchange rate regimes.[2] Under flexible exchange rates, an expansion in wage government consumption has a more severe negative effect on traded sector output, and hence on the trade balance, as the nominal appreciation causes a further decline in sales in the presence of sticky prices in terms of domestic currency units. In contrast, an increase in labor taxation will have a less severe effect as the nominal depreciation acts in the opposition direction to the increase in wage costs.

Finally, given our focus on the labor market as the center of adjustment to fiscal policy, we do not expect nonwage government consumption (government purchases from the private sector) to be as important as wage government

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[1] In some models with elastic individual labor supply elasticities, an increase in government spending can stimulate an increase in the aggregate labor supply which acts to counteract the crowding out of non-government production that we emphasize (Baxter, 1995; Obstfeld and Rogoff, 1995). The mechanism is that an expansion in government spending raises the present or future tax burden and this negative wealth effect stimulates individuals to substitute labor for leisure. We ignore this effect in the discussion in the main text.

[2] The simultaneous operation of the labor market and exchange rate transmission channels of fiscal policy requires a 'partially flexible' economy in which firms in the traded sector in part respond to wage pressures but also are reluctant to quickly adjust posted output prices by too large a magnitude. Alternatively, we can think of a staggered contracts environment, in which some firms face unchanged wage costs and others must renegotiate wages and prices in the current period.

consumption, unless government purchases from the private sector are biased towards highly labor-intensive nontraded goods.[3]

3. Empirics

We examine a panel of 17 OECD countries over 1960–1995 (see Lane and Perotti, 1997 for more details on the data set). Our fiscal policy variables are wage government consumption (CGW), nonwage government consumption (CGNW) and cyclically adjusted labor taxes (TAX), expressed as log first differences. To allow for exchange rate regime effects in the transmission of fiscal policy, we interact these variables with 0–1 dummies PEG and FLEX, where PEG scores 1 in the case of pegged exchange rate regime and 0 otherwise and FLEX is the complement of PEG. In addition, we control for business cycle effects by including a measure of the output gap (GDPDEV) as a control variable.[4]

In Table 1, the dependent variable is the trade balance, measured as a share of GDP, in first differences. In column (1), a pooled specification is estimated. Country dummies are included in column (2) and time dummies in column (3). The specification in column (4) includes both country and time dummies. Regardless of the specification, we see that across columns (1)–(4), an expansion in wage government consumption is associated with a significant deterioration in the trade balance under flexible exchange rates. This is consistent with the operation of a short-run sticky-price transmission mechanism. In this case, a 3.67% (one standard deviation increase) in wage government consumption is associated with a 0.6 percentage points decline in the trade balance to GDP ratio, an economically significant magnitude. In line with the theoretical discussion in Section 2, the magnitude of the effect of nonwage government consumption is much weaker but it is significant under pegged exchange rates. Labor taxes are not significant under either exchange rate regime. However, the weak estimated effect of taxes may be a function of the poor quality of the tax data for some countries. As in Alesina and Perotti (1997b), conditioning on the degree of centralization of wage-setting in the labor market may improve estimation of tax effects, which we leave for future research.

We repeat the exercise in Table 2 with ratio of exports to GDP as the dependent variable, in first differences. Under both pegged and flexible exchange

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[3] However, a temporary increase in nonwage government consumption of traded goods can directly lead to a decline in the trade balance by increasing the level of absorption of tradables.

[4] We also include a dummy variable for realignments within the EMS and devaluations within the Bretton Woods system and interact the fiscal policy variables with a dummy variable for the 1974–1975 oil shock episode. These controls do not substantially affect the results. See Lane and Perotti (1997) for more details.

Table 1
Fiscal policy and the trade balance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PEG*CGW	0.023	0.018	− 0.026	− 0.037	0.007	0.005	− 0.036	− 0.044
	(0.96)	(0.74)	(0.88)	(1.2)	(0.26)	(0.2)	(1.17)	(1.41)
FLEX*CGW	− 0.116	− 0.132	− 0.143	− 0.168	− 0.106	− 0.122	− 0.138	− 0.164
	(3.21)	(3.48)	(3.78)	(4.17)	(2.81)	(3.09)	(3.55)	(3.94)
PEG*CGNW	− 0.033	− 0.038	− 0.038	− 0.045	− 0.038	− 0.041	− 0.042	− 0.047
	(1.71)	(1.88)	(1.96)	(2.22)	(1.89)	(1.99)	(2.12)	(2.29)
FLEX*CGNW	− 0.037	− 0.044	− 0.035	− 0.044	− 0.033	− 0.04	− 0.031	− 0.041
	(1.42)	(1.61)	(1.29)	(1.57)	(1.25)	(1.45)	(1.15)	(1.44)
PEG*TAX					0.035	0.03	0.027	0.02
					(1.65)	(1.36)	(1.27)	(0.93)
FLEX*TAX					− 0.026	− 0.023	− 0.015	− 0.011
					(0.99)	(0.84)	(0.53)	(0.38)
GDPDEV	0.228	0.227	0.26	0.256	0.225	0.224	0.248	0.246
	(8.05)	(7.91)	(7.27)	(7.07)	(7.67)	(7.54)	(6.58)	(6.43)
Country dummies?	No	Yes	No	Yes	No	Yes	No	Yes
Year dummies?	No	No	Yes	Yes	No	No	Yes	Yes
$\bar{R}^2$	0.14	0.13	0.21	0.2	0.14	0.13	0.21	0.2
p(CGW)	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01
p(CGNW)	0.9	0.84	0.9	0.98	0.89	1	0.74	0.86
p(TAX)					0.07	0.13	0.22	0.38
N	557	557	557	557	554	554	554	554

Notes: Dependent variable is ratio of trade balance to GDP, in first differences. OLS estimation. t-statistics in parentheses. $p(X)$ is p-value from F-test that X has same coefficient across PEG and FLEX regimes. Constant and dummies for PEG, FLEX, realignment and 1974–1975 episodes included but not reported.

rates, exports significantly decline in response to an increase in wage government consumption, in line with a crowding out of the traded sector. Moreover, the magnitude of the contraction in exports is roughly twice as large under flexible exchange rates relative to a pegged exchange rate regime, consistent with an account in which traded sectors producers in a flexible exchange rate system must additionally contend with the negative effects of exchange rate appreciation. Repeating the experiment of a one standard deviation increase in wage government consumption under flexible exchange rates in column (8), the associated contraction in the exports–GDP ratio is 0.8 percentage points. Nonwage government consumption and labor taxes do not have a significant effect on the volume of exports.

In Table 3, the dependent variable is the ratio of imports to GDP, in first differences. According to the point estimates, a contraction in imports takes

Table 2
Fiscal policy and exports

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PEG∗CGW	− 0.094	− 0.099	− 0.072	− 0.08	− 0.119	− 0.12	− 0.078	− 0.083
	(3.51)	(3.61)	(2.57)	(2.78)	(4)	(4.01)	(2.67)	(2.77)
FLEX∗CGW	− 0.233	− 0.254	− 0.211	− 0.23	− 0.233	− 0.252	− 0.206	− 0.22
	(5.75)	(5.99)	(5.82)	(6.03)	(5.57)	(5.74)	(5.55)	(5.64)
PEG∗CGNW	− 0.017	− 0.024	− 0.024	− 0.033	− 0.022	− 0.028	− 0.025	− 0.032
	(0.8)	(1.06)	(1.3)	(1.7)	(1.01)	(1.24)	(1.29)	(1.67)
FLEX∗CGNW	− 0.009	− 0.011	− 0.01	− 0.012	− 0.009	− 0.011	− 0.008	− 0.009
	(0.3)	(0.36)	(0.39)	(0.43)	(0.31)	(0.37)	(0.3)	(0.32)
PEG∗TAX				0.044	0.041	0.014	0.008	
				(1.87)	(1.71)	(0.71)	(0.4)	
FLEX∗TAX				− 0.044	− 0.006	− 0.019	− 0.023	
				(0.13)	(0.18)	(0.72)	(0.88)	
GDPDEV	− 0.067	− 0.07	0.122	0.114	− 0.069	− 0.071	0.129	0.126
	(2.09)	(2.19)	(3.54)	(3.32)	(2.12)	(2.16)	(3.58)	(3.5)
Country dummies?	No	Yes	No	Yes	No	Yes	No	Yes
Year dummies?	No	No	Yes	Yes	No	No	Yes	Yes
$\bar{R}^2$	0.12	0.12	0.41	0.41	0.13	0.13	0.41	0.42
p(CGW)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
p(CGNW)	0.81	0.73	0.64	0.51	0.71	0.65	0.59	0.46
p(TAX)					0.2	0.22	0.31	0.34
N	557	557	557	557	554	554	554	554

Notes: Dependent variable is ratio of exports to GDP, in first differences. OLS estimation. *t*-statistics in parentheses. $p(X)$ is *p*-value from F-test that X has same coefficient across PEG and FLEX regimes. Constant and dummies for PEG, FLEX, realignment and 1974–1975 episodes included but not reported.

place, and by a similar magnitude, under both exchange rate systems in response to an expansion in wage government consumption. However, the effect is not significant once time dummies are included in the specification (columns (3), (4), (7) and (8)). That is to say, in line with fiscal policy operating via a contraction in traded sector output, the deterioration in the trade balance is mostly being driven by a fall in exports. Moreover, the similarity in import behavior across exchange rate regimes suggests that the exchange rate channel is operating via the negative effect of exchange rate appreciation on foreign demand for domestically produced traded goods. According to the point estimates in column (8) of Table 3, a one standard deviation increase in wage government consumption under flexible exchange rates reduces the imports–GDP ratio by only 0.2 percentage points, which is only 25% of the magnitude of the effect on the export–GDP ratio. Nonwage government consumption and labor taxes again do not significantly influence the volume of imports.

Table 3
Fiscal policy and imports

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PEG*CGW	− 0.117	− 0.117	− 0.047	− 0.044	− 0.125	− 0.126	− 0.042	− 0.039
	(3.9)	(3.79)	(1.55)	(1.41)	(3.77)	(3.69)	(1.35)	(1.21)
FLEX*CGW	− 0.118	− 0.122	− 0.068	− 0.062	− 0.128	− 0.13	− 0.068	− 0.056
	(2.59)	(2.56)	(1.77)	(1.51)	(2.71)	(2.61)	(1.72)	(1.34)
PEG*CGNW	0.016	0.014	0.014	0.012	0.015	0.013	0.018	0.015
	(0.65)	(0.55)	(0.7)	(0.6)	(0.61)	(0.49)	(0.87)	(0.72)
FLEX*CGNW	0.028	0.033	0.024	0.032	0.024	0.029	0.024	0.033
	(0.86)	(0.95)	(0.9)	(1.13)	(0.72)	(0.83)	(0.85)	(1.13)
PEG*TAX					0.009	0.012	− 0.013	− 0.012
					(0.35)	(0.43)	(0.59)	(0.55)
FLEX*TAX					0.023	0.017	− 0.004	− 0.013
					(0.67)	(0.5)	(0.15)	(0.44)
GDPDEV	− 0.295	− 0.297	− 0.138	− 0.142	− 0.294	− 0.296	− 0.12	− 0.12
	(8.28)	(8.23)	(3.79)	(3.84)	(7.99)	(7.91)	(3.12)	(3.11)
Country dummies?	No	Yes	No	Yes	No	Yes	No	Yes
Year dummies?	No	No	Yes	Yes	No	No	Yes	Yes
$\bar{R}^2$	0.16	0.15	0.49	0.49	0.17	0.15	0.5	0.49
p(CGW)	1	0.93	0.63	0.7	0.96	0.94	0.58	0.72
p(CGNW)	0.75	0.65	0.74	0.56	0.83	0.69	0.85	0.6
p(TAX)					0.75	0.9	0.8	0.99
N	557	557	557	557	554	554	554	554

Notes: Dependent variable is ratio of imports to GDP, in first differences. OLS estimation. t-statistics in parentheses. $p(X)$ is p-value from F-test that X has same coefficient across PEG and FLEX regimes. Constant and dummies for PEG, FLEX, realignment and 1974–1975 episodes included but not reported.

These results are generally consistent with the findings in Lane and Perotti (1997). In that paper, we explored the impact of fiscal policy on unit labor costs, output, employment and profitability in the traded (manufacturing) sector. We showed that an increase in wage government consumption is associated with a rise in unit labor costs, a decline in traded sector employment and output and a fall in profitability. Moreover, the fall in profitability was significantly more severe under flexible exchange rates and there was also some evidence that the decline in traded sector output was also sharper under flexible exchange rates.

4. Interpretation

Our empirical results indicate that fiscal policy shifts have a significant short-run impact on the trade balance. The mechanism we emphasize is the

negative effect of fiscal policy on the level of traded sector output. Moreover, there is support for a short-run nominal rigidity channel, given the significant difference across pegged and flexible exchange rate regimes. These findings suggest a close relationship between fiscal adjustment (and its composition) and current-account positions. For instance, according to our estimates, a fiscal reform that cuts wage government consumption 'crowds in' an expansion of exports and, under flexible exchange rates, improves the trade balance. Moreover, these positive effects are reinforced if the fiscal reform is accompanied by a flexible exchange rate or a devaluation.[5] It is worth recalling that it is this kind of fiscal reform that is also the most persistent and successful (Alesina and Perotti, 1995b, 1997b). The positive impact on the traded sector of a reduction in wage government consumption may be one explanation for this persistence and success, by improving the competitiveness of exporting firms. In addition, the improvement in the trade balance in itself may also be politically attractive if the trade balance is a target of policymakers (Summers, 1988).

Conversely, our results also support a role for fiscal policy in a balance of payments adjustment program (Milesi-Ferretti and Razin, 1996). Our evidence indicates that a good policy instrument in engineering an improvement in the trade balance is to reduce wage government consumption, ideally in parallel with a nominal depreciation or devaluation. Moreover, the trade balance improvement will mostly take the form of an expansion in exports rather than a painful contraction in imports. The labor market adjustment mechanism relies on inter-sectoral mobility of labor, so labor market policies that promote the reallocation of workers across sectors maximize the trade balance improvement that can be achieved from a fiscal reform of a given magnitude.

5. Conclusions

We have highlighted the impact of fiscal policies on the level of production of traded goods as a key mechanism by which movements in government spending and taxation influence the behavior of the trade balance. Empirically, the evidence from the OECD suggests that shifts in wage government consumption do significantly affect the external account and that this effect is stronger under flexible exchange rates, consistent with the operation of a short-run sticky-price transmission mechanism. These results add further to the body of work that seeks to document the macroeconomic consequences of fiscal adjustment. In the other direction, they also suggest that fiscal policy can play an important role in

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[5] Alogoskoufis (1992) notes the positive role played by exchange rate devaluation in the success of the 1987 Irish fiscal reform package.

reform packages that are designed to improve the external account. Finally, in this paper, we have considered only the impact effect of fiscal policies on the trade balance. One goal for future research is to investigate the dynamic relationship between the sequential paths for fiscal policy and the trade balance. Another is to extend the analysis in order to address the impact of fluctuations in government investment on the external account.

Acknowledgements

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